

7 extract sufficient to provide 0.5 to 30 g added hop pectin per  
8 hectoliter beverage, said quantity of added hop pectin being  
9 provided to said beverage at a stage of said preparation process  
10 effective to provide a beverage having [measurably increased]  
11 effective foam head stability, the addition of said hop pectin  
12 extract acting to increase the ratio of hop pectin to hop bittering  
13 substances and/or hop aroma substances in said beverage.

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#### REMARKS

Applicant's counsel thanks the Examiner for the careful and thorough examination given the application. Applicant's counsel also thanks the Examiner for the courteous telephone interview conducted on April 28, 2000, during which Applicant's counsel and the Examiner discussed the prior Office action, the newly cited reference and prior documents in the file. The substance of the telephone interview is as set forth in the Examiner's Interview Summary mailed May 1, 2000.

Applicant's counsel will now respond in order to the numbered paragraphs in the February 7 Office action.

In response to paragraph 1 of the Office action, it is pointed out that the Abstract in question is the same as the Abstract printed on the cover page of the PCT pamphlet in the present case (PCT International Publication No. WO 96/04363). The PCT pamphlet was deposited in this case by the International Bureau and U.S. prosecution commenced based upon this PCT pamphlet. Accordingly, the PCT Abstract was already in this case and thus the Abstract in question is not new matter.

In paragraph 3 of the Office action, the Examiner has requested the specificational basis for the limitations of Claims 50 and 51, which include the limitation that the "hop pectin extract has anhydrogalacturonic acid content of at least 20 weight percent". This limitation finds support on page 17 lines 15-17 of the specification. When the calculations are done, line 15 shows AUA content of 21.28 weight percent; lines 16 and 17 show AUA content of 21.74 and 21.28 weight percents, respectively. Furthermore, page 17 lines 38-48 show AUA weight percents of 55-75 weight percent. The specification at page 9 line 32 shows AUA content of 80 percent. Thus the specification demonstrates AUA contents from 21-80 weight percent. During the telephone interview the Examiner inquired whether this supported up to 100 weight percent. Those of ordinary skill in the art certainly know how to further purify chemical substances. That is all that would be required here, the further chemical purification of a chemical substance. It is submitted that those of ordinary skill in the art know how to further increase the purity of these substances using techniques known in the art. Accordingly, it is believed that there is support for these claims as presented.

In paragraphs 4-7 of the Office action, the Examiner expressed concern about the phrase "measurably increased" which appeared on lines 2 and 11 of Claim 36. In response, it was agreed that applicant would delete "measurably increased" from Claim 36 line 2 and at Claim 36 line 11, replace "measurably increased" with "effective".

In paragraphs 15-17 of the Office action, the Examiner

rejected the claims under Section 103 as unpatentable over Hoelle et al. Hoelle states at column 4 lines 70-72 that "the organic cell constituents of the hops have a favorable influence on the creation and maintenance of foam on the beer". Chemically speaking, "organic cell constituents" includes basically everything except water and minerals. Accordingly, Hoelle is really pointing out something which has been known for 1,000 years: that is, that but for the water and minerals, the organic material in hops helps in the creation and maintenance of foam in beer. This is really simply a statement regarding the knowledge of the prior art, which is that without the organic material in the hops, you will not have foam on the beer. Stated another way, Hoelle is setting forth what is inherent in beer-making; if you use hops, you will get foam in beer. Nowhere does Hoelle disclose that a peculiar component of the organic material in hops, that is, the pectin, has a particular and surprising and unexpected improvement in foam stability in beer. Hoelle simply teaches known beer; he does not teach the surprising and unexpected results of the present invention. It is established law that surprising and unexpected results of the present invention establish patentability over a Section 103 reference. Such is the case here. On November 24, 1999 applicant submitted the Wijsman Declaration. This Declaration ran tests comparing reference beer (pilsner beer) against reference beer with hop pectin added thereto. The Declaration shows the tests results in paragraph 5. These test results show that the addition of hop pectin dramatically and surprisingly improves the foam stability of the beer. As more hop pectin was added, the foam stability

increased. Also on November 24, 1999, applicant submitted the Doderer Declaration. This Declaration also compared reference beer (pilsner beer) against reference beer to which various types of hop pectin had been added. The test results are shown in paragraph 3 of the Declaration. Paragraph 4 of the Declaration points out that the results of these experiments were surprising and unexpected; it states: "It was surprising and unexpected that the addition of hop pectin would improve the foam stability of reference beer in the dramatic fashion shown by the test results above." The reference beers in these two Declarations correspond to the beer of Hoelle; they simply contain "organic cell constituents" in accordance with the known methods of making beer. As shown by both Declarations, the addition of hop pectin surprisingly and unexpectedly improved the stability of the beer foam. In view of this showing of surprising and unexpected results over the prior art, the Declarations clearly demonstrate that the present invention is patentable over the prior art as exemplified by Hoelle.

In paragraph 19 of the Office action, the Examiner sets forth applicant's argument that if one were to add more hops to obtain the level of pectin claimed, one would add more bitterness and "the present invention is provided with extra hop pectin without adding in extra bittering and aroma agents." The Examiner gave little weight to that argument since the claim did not contain such a limitation. In response, applicant has now amended Claim 36 to add the limitation that "the addition of said hop pectin extract acting to increase the ratio of hop pectin to hop bittering substances and/or hop aroma substances in said beverage." The addition of

this limitation does not add new matter since the specification teaches the addition of purified or concentrated hop pectin extracts to the conventional beer. The conventional beer has a certain ratio of hop pectin to bittering and/or aroma substances; the addition of concentrated hop pectin to such a beer will by logic increase the ratio of hop pectin to hop bittering and/or hop aroma substances. Accordingly, no new matter has been added.

In response to paragraph 20 of the Office action, applicant intends to submit a further Declaration as indicated in the Interview Summary. The declaration will compare commercial beet pectin extract with the claimed invention to overcome the Bukovskii reference.

In response to paragraph 21 of the Office action, it is pointed out that there is no inconsistency between the test data in the specification and the evidence in the declaration. This can be seen by comparing the specification test data on page 17 lines 12-17 with the above-referenced Wijsman Declaration at paragraph 5. An examination shows that these two sets of data are very comparable. In addition, hops are a natural product which vary depending on a variety of factors including plant variety, growing conditions, soil conditions, climate, time of harvest, etc. Beer is a manufactured product which varies based upon the natural ingredients used. These natural variations in the starting materials will naturally play a role in the test results, and a certain amount of variation is to be expected.

The Examiner's concerns have now all been addressed. It is believed that the application is now in condition for allowance and such is respectfully requested.

If there are any additional fees resulting from this communication, please charge same to our Deposit Account No. 16-0820, our Order No. 29865.

Respectfully submitted,

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